

# WORKING TO MAKE EVERY DROP COUNTS

Sustainable Energy and Environment

For this year's World Water Day 2023 celebration, the Mekong Institute (MI) joins the global movement in recognizing the fundamental role of water as a precious resource. The theme of this year's celebration is "Accelerating Change" which highlights the urgency to solve the water crisis as it affects all of us. As an organization which is committed to promoting sustainable development, we are honored to have supported the implementation of such an innovative water project, helping communities in the Mekong region to have better access to water.

Rural communities in the Mekong region suffer from a shortage of safe drinking water. A "rain school initiative" is helping the people to achieve lasting improvements to their water security in times of climate change.

Water has become scarce in the Mekong region due to economic development, rapid population growth, climate change, and environmental degradation. Without intervention, people's well-being, especially in rural areas, will be seriously affected over the coming years.



Dr. Mooyoung Han, a professor at *Seoul National University R&DB (SNU R&DB)*, is currently leading an ambitious initiative to make rainwater 'a thing of the present' again. Through the 'Promotion of Innovative Rainwater for Drinking (RFD) System as a Sustainable Water Supply in Rural Schools' project,

he is committed to making the most of rainwater, fighting the changing climate, and sharing his knowledge with the wider public.

*According to Dr. Mooyoung, "rainwater harvesting is a simple solution that has an incredible effect on overcoming the climate crisis."*

## TRADITION MEETS TECHNOLOGY

*Inspired by the past tradition of rainwater harvesting, which captures rainwater from rooftops for beneficial use, the 67-year-old professor is a strong advocate for rainwater harvesting, helping communities gain access to clean water.*



“Although rainwater harvesting has traditionally been used, it was not properly utilized and maximized due to technical challenges such as poor water quality and shortage of water during the dry season,” said the professor of the impetus behind the idea.

To overcome this, an innovative system is needed and must be tested. “My ultimate goal is to make water secure. Because water is life.”

## EVERY DROP COUNTS

In the past, people used to store and make use of harvested rainwater all the time. Take rice paddies for example: these demonstrate how rainwater is collected while also mitigating flood and drought.



As a result of rapid urbanization, industrialization, and pollution, the quality of harvested rainwater has become poor and scarce during the dry season. To overcome the challenges, an innovative system to catch, store and filter the water and make it suitable for drinking is needed.

Between January 2021 – October 2023, one pilot RFD system will be constructed at a rural school in 5 Mekong countries. Each will have a capacity of 20 m<sup>3</sup>, which can provide safe and sustainable drinking water (500 liters/day). A camera and an online monitoring tool will be installed to make remote tracking possible.

“For me, school is the best place to learn to overcome both the water and the climate crises,” Dr. Mooyoung explained. Since the start of the project, he has set up the RFD systems in the following locations across Mekong countries and two more are underway:

1. Nguyen Binh Khiem School, Ha Long City, Viet Nam

2. Kamboul High School, Phnom Penh, Cambodia
3. Senarat Witthayakhan School, Nakhon Ratchasima, Thailand

“Equally important is that the system is easy to operate. At the heart of this are students who are the owners and leaders of the future. They must be able to use it, just like adults,” said the professor of his ambitious plan.

Training courses are also conducted to ensure stakeholders and local people are able to use and maintain the system smoothly and efficiently. Design and Operation guidelines will be developed for the purpose of knowledge sharing while a local management committee will be set up to oversee the overall management after the project ends.

## **FIRST RAINWATER SCHOOL IN SOUTHEAST ASIA**

THE NGUYEN BINH KHIEM SCHOOL IN HA LONG CITY, VIET NAM BECAME THE FIRST RAINWATER SCHOOL IN SOUTHEAST ASIA. THE SCHOOL'S RAINWATER COLLECTION AND TREATMENT SYSTEM ARE CAPABLE OF PROVIDING UP TO 500 LITERS OF PURIFIED DRINKING WATER BY CONVERTING RAINWATER INTO POTABLE WATER. THE SYSTEM HAS BEEN IN PLACE SINCE 2021 - 2022.

“With 95 classes and 3,345 students, the rainwater project currently meets the needs of approximately one-fifth of the school's students. The school hopes to expand the rainwater filtration system in the future to provide clean water for all the students and reduce costs associated with water provision,” Ms. Nguyen Thi Khuyen, Principal of Nguyen Binh Khiem School told the local Vietnamese news media.

Dr. Nguyen Duc Canh, Director of the Institute for Water and Environment, explains how the system runs: “The system features four consecutive tanks instead of a single storage tank. As water flows through each tank, the settling capacity increases, and each tank employs a film capable of self-treating the water. Additionally, the system includes multiple treatment steps from the rooftop to the drinking point, ensuring that a failure or disruption at one stage will not impact the entire system.”

Aside from supplying students with clean drinking water, the project also fosters numerous meaningful activities. These range from raising climate change awareness and the response capacity of the students and the teachers.

“The rainwater project at Nguyen Binh Khiem School has received high praise for its creativity and community engagement efforts. In March, it will be presented and introduced at the National Water Action Program, a global event held every five years in New York, USA. This model will be used to inspire the implementation of similar initiatives in other schools worldwide,” said Professor

Mooyoung Han who is also the Chairman of the International Water Association (IWA) Rainwater Harvesting and Management Specialist Group, with a big smile.

## **MKCF HAS A KEY ROLE TO PLAY**

Established in 2013, the Mekong-Republic of Korea Cooperation Fund (MKCF) provides grants for projects that are regional in nature and aligned with the priorities of the Mekong countries. The project can be implemented in a single country but shall address national issues while facilitating the regional integration process.

“MI is proud to support the MKCF as the fund coordinator to administer the grants, provide advisory services, and monitor the implementation of the 40 funded projects. This includes a host of cooperation projects under the following priority areas: 1) Culture and Tourism; 2) Human Resource Development; 3) Agriculture and Rural Development; 4) Infrastructure; 5) Information Communication Technology (ICT) Environment; and 6) Non-traditional Security Challenges,” said Mr. Madhurjya K. Dutta, MKCF coordinator and Director of the Trade and Investment Facilitation Department of MI.

“The “Promotion of Innovative Rainwater for Drinking (RFD) System as a Sustainable Water Supply in Rural Schools” is among one of the outstanding projects in its strategy and implementation approach and is “very much aligned with the concept of MKCF of bringing technological experience and expertise in critical areas where the Republic of Korea (ROK) has demonstrated excellence in developing solutions,” commented Mr. Dutta.

He added that “rainwater harvesting is a simple solution that brings incredible effects to overcoming the water crisis. The development of the RFD system at schools in the region would contribute not only to the schools but also to the community where the schools are located. So far, the project has received much positive feedback from stakeholders and the interested public. And we hope to share the knowledge further with the international community,” added Mr. Dutta.

Media source: <https://www.youtube.com/watch?v=-laWRtLbkB8>